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Caribbean Biosafety and Biotechnology Situation

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Report Highlights:
Updated Sections: I, II. Chapter 1. Parts A, B, C & D.
Biotech regulation has been virtually non-existent in the Caribbean. However, this may change in the coming years. In June 2011, the United Nations Environment Programme/Global Environment Facility (UNEP/GEF) initiated a four-year, $13 million Regional Project for Implementing National Biosafety Frameworks (NBFs) in the Caribbean, which will likely become the de facto means of regulating biotechnology within the twelve Caribbean Community (CARICOM) countries participating in the project. Currently, the region relies heavily on the United States as its main supplier of food and agricultural products, and this trend is expected to continue

Section I. Executive Summary:

Several institutions within the CBATO's region of coverage [1] are conducting biotech research on crops such as sugarcane, cassava, papaya, rice, coconuts, cocoa, coffee, peppers, and spices and to a lesser extent on ornamentals and animals. This research has yielded a number of advances, including developing transgenic papaya varieties resistant to devastating papaya viruses as well as the development of biochemical compounds suitable for use as bio-pesticides. However, actual commercial production of biotech products is still sometime off in the future. The Caribbean region is also not yet at the stage where biotech engineering (or cloning of animals) is being developed.

Post is not aware of any specific requirements related to the importation of biotech products in its region. Currently, the region relies heavily on the United States as its main supplier of food and agricultural products. Nearly, 95 percent of all corn, soybean, cotton and canola products are imported from the United States.

Suppliers may encounter greater regulation of biotech products as well as increased consumer awareness in the years ahead. Over the past several years most of the countries within CARICOM [2] have worked at developing their own draft NBF, a combination of policy, legal, administrative and technical instruments geared toward addressing safety for the environment and human health in relation to modern biotechnology. These countries are now seeking to finalize and adopt legislatively their NBFs and implement them with the help of a UNEP/GEF four-year, $13 million project. The project is assisting the 12 CARICOM countries that are parties to the Cartagena Protocol on Biosafety (CPB) [3] to implement effective, operable, transparent and sustainable NBFs, deliver global benefits that are compliant with the CPB in the Caribbean sub-region countries, and protect against any potential risks from the introduction of living modified organisms (LMOs) into the environment. To date, only St. Kitts and Nevis has enacted any biosafety legislation. While an important first step toward establishing its comprehensive NBF, regulations have yet to be developed and thus the regulatory and institutional structures are not operational.

[1] The CBATO islands of coverage are: Anguilla, Antigua & Barbuda, Aruba, The Bahamas, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Guadeloupe, Martinique, Grenada, Montserrat, the former Netherlands Antilles (Curaçao, Bonaire, Sint Maarten, Saba & St. Eustatius), St. Kitts & Nevis, St. Lucia, Saint Martin, St. Barthélemy, St. Vincent & the Grenadines, Trinidad & Tobago, and Turks & Caicos Islands.

[2] CARICOM Member States are: Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago (CARICOM Associate Members are: Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Turks and Caicos Islands)

[3] CARICOM Member States that are Parties to the CPB are: Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago.

Section II. Caribbean Biosafety and Biotechnology Situation

Chapter 1: Plant Biotechnology:

Part A: Production and Trade

Overall, agricultural production throughout the CBATO region is minimal, and most countries within the region must import the majority of their agricultural products. Total land area is 23,783 sq. km. (9,183 sq. miles), roughly the size of New Hampshire. Of this amount, only about seven percent of the land is arable and an even smaller percentage is actually utilized for farming. There is no known commercial production of biotech products in the region. Several institutions in the CBATO region have engaged in biotech research, mainly to do with crops produced locally.

Currently, no country in the Caribbean region has an approved, fully-functioning biosafety legal framework in place to oversee the production or release of LMOs, which may represent an impediment to taking research to the next level of field trials and later commercialization.

On a regional level, many research institutions throughout the Caribbean have recognized that the production of biotech products could lead to an increase in yields, and reduced use of water in agriculture. These institutions have targeted several local products (sugarcane, cotton, rice, coconuts, cocoa, coffee, peppers, and spices) that could be improved using biotechnology. Some of the institutions leading the way are: the University of the West Indies (UWI), the Caribbean Agriculture and Development Institution (CARDI), the Caribbean Industrial Research Institute (CARIRI) in Trinidad and Tobago, and the National Agriculture Research Institute (NARI) in Guyana.

Post is not aware of any specific requirements related to the importation of biotech products in its region [1]. Nine of the countries in the CBATO region are parties to the CPB [2], and while they are all in the process of trying to meet their obligations under such protocol, none has fully implemented it to date. Currently, the United States is the region's main supplier of food and agricultural products. Nearly, 95 percent of all corn, soybean, cotton and canola products are imported from the United States.

Within the Caribbean region, CARICOM is focused on establishing the Caribbean Single Market and Economy (CSME) to facilitate the free movement of CARICOM-origin products between Member States. It remains to be seen whether CARICOM will develop regional rules affecting trade in biotech products.

Part B: Policy

Most of the countries within CARICOM appear to want to address their biotech requirements through a NBF. To date, only St. Kitts and Nevis has enacted any biosafety legislation. While an important first step toward establishing its comprehensive NBF, implementing regulations have yet to be developed and thus the regulatory and institutional structures are not operational. None of the other CARICOM countries have enacted any biosafety legislation.

[1] Guadeloupe and Martinique, as departments of France, may be exceptions to this statement.

[2] Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago.

The Regional Project for Implementing NBFs
In June 2011, UNEP/GEF initiated a four-year, $13 million Regional Project for Implementing NBFs in the Caribbean. The project is assisting the 12 CARICOM countries that are parties to the CPB with implementation of their obligations. This project is a continuation of previous UNEP/GEF biosafety capacity building efforts in the region.

The overall goal of the UNEP/GEF project is to implement effective, operable, transparent and sustainable NBFs, and deliver global benefits that are compliant with the CPB in the Caribbean sub-region countries while also protecting against any potential risks from introduced living modified organisms (LMOs). The four project aims are to:

- establish institutional (policy/legal) frameworks for biosafety at both the national and regional levels that will allow Parties to the CPB utilize modern biotechnology in compliance with this Protocol;
- facilitate the establishment, enhancement and operation of institutional capacities as well as technical and technological resources among the participating Caribbean Member States for the detection, assessment and management of potential risks from modern biotechnology (in combination with invasive alien species (IAS) where appropriate) at the national and regional levels;
- develop and strengthen the human resource base and level of expertise in biosafety on a national and regional scale, in support of biosafety management and national biosafety systems in the Caribbean;
- improve and consolidate biosafety information management within the Caribbean project countries in a way that can promote transparency, raise public awareness and facilitate the biosafety decision making, and be up scaled to provide broader regional information services as needed, and if possible, establish links to information sources.

The regional portion of the project aims to support the establishment of a region-wide mechanism for coordinating and supporting countries in biosafety management by providing them with training on biosafety risk assessment and the management of LMOs. According to various sources, the regional aspect could also create a Regional Biosafety Clearing House (BCH) to support and coordinate information exchange. The regional process also aims to strengthen institutional capacities and provide technical guidance on biosafety issues in the region as well as assist with the implementation of NBFs.

Meanwhile, national activities of the project will support the establishment in the twelve countries of the necessary legal and institutional frameworks, public education programs, and training necessary for effective and sustained implementation of the CPB. Projected country-specific outcomes include establishing:
- functional NBFs in line with the CPB and the national and regional needs of each country;
- functional national systems able to detect LMOs and perform risk assessments;
- functional systems to monitor the environment and enforce regulations;
- national systems for biosafety information management while stimulating public awareness, biosafety education, and participation in the decision-making process.

Although the project officially began in June 2011, the project's steering committee did not hold its inception meeting until November 2012, and the first drawdown of project funds did not take place until early 2013. The late start will likely mean that an extension to the 2015 project end date will need to be requested. Currently the project seems to be slowly gaining momentum with most countries reportedly

making advances on country-level activities (e.g. hiring a National Biosafety Coordinator, conducting outreach and consultations with stakeholders, preparing draft biosafety legislation for enactment).

Some regional activities have also gotten underway. A Center of Excellence in Biosafety, which will serve as a virtual information hub for the region, is expected to be inaugurated in October 2013. The Center will take over responsibility for the regional laboratory which is being planned for Barbados. This will be a reference lab focusing largely on commercial aspects (testing and analysis of GMO's). A Master of Science (MSc) program in Biotechnology is also being developed at the University of the West Indies (UWI) as part of the project. The program, which will be largely virtual, is expected to get underway during UWI's Spring 2014 semester. UWI is also setting up its own biotech office as they will be looking to start their own biotech training program, in addition to the Master of Science (MSc) program they are setting up as part of the project.

Part C: Marketing

There are no significant marketing issues that currently affect U.S. products. However, islands such as Dominica that export organically grown crops to niche markets in Europe, are reportedly concerned with various biodiversity issues. Dominica, which is interested in becoming an "all organic" island, is mainly concerned that coexistence with any biotech material introduced into their small island environment could jeopardize their exports to Europe. This concern may be a factor in shaping the regulatory environment in some of the countries in the future and could have a marketing impact on some U.S. products.

Exporters of biotech commodities should also be aware that as part of the UNEP/GEF project, participating countries are undertaking "awareness raising activities" at the national level to educate the public on biosafety, biotechnology, bio-security and invasive species. The project is also supporting stakeholder consultations as part of the national processes to enact biosafety regulations, and it is anticipated that most of the CARICOM countries in the region will use similar procedures.

Part D: Capacity Building and Outreach

Activities

Recognizing the region's capacity needs in the areas of biotechnology and biosafety, in 2011 the Caribbean Basin Agricultural Trade Office (CBATO) facilitated a Cochran Fellowship for a Trinidad and Tobago Health official to attend an International Short Course in Agricultural Biotechnology at Michigan State University (MSU). Similarly, in 2013 the CBATO has facilitated Cochran Fellowships for an official from each Dominica, Grenada, St. Lucia, and St. Vincent and the Grenadines to participate in an International Short Course in Environmental Aspects of Agricultural Biotechnology at MSU as well. An EMP-funded biosafety workshop, which will facilitate discussions with key biosafety officials throughout the region, is also being planned for August 2013. The CBATO will also try to secure the participation of guest speakers in UWI's MSc Biotechnology Program mentioned above. Further USG capacity building and outreach may be possible in 2013 if funding can be identified for this purpose.

Strategies and Needs

Regarding capacity building strategies and needs, the aforementioned UNEP/GEF project has done substantial work. In terms of establishing and upgrading the resource base and institutional capacity, the project aims to:

- complete overall capacity/needs assessment of key institutions (national and regional);
- design training programs and manuals, conduct training workshops, and provide short term attachment opportunities for scientists and technical personnel involved in detection and risk management of LMOs;
- develop validated standards and protocols for biosafety risk assessment and risk management, and if relevant, identification of LMO shipments; and strengthen the Bureau of Standards of each participating country to improve their capacity to provide monitoring services as far as standards for biosafety management, and to coordinate national (and eventually regional) accreditation scheme for biosafety laboratories;
- procure laboratory equipment, supplies and reagents required for establishing national reference laboratories and/or equipping them and making them operational for LMO testing.

In terms of human resource development the project aims to :

- develop of biosafety programs and manuals for personnel involved in: a) administrative system management; b) legislative, monitoring and enforcement system management; c) public education and participation system management; and d) LMO risk management (including risk communication) at the national and regional levels;
- ensure continuity in biosafety training with succession planning and continuous training to ensure the development of a cadre of trained personnel in which relevant expertise is always available at the national and regional levels;
- conduct training workshops for scientific and technical personnel involved in risk assessment or risk management of LMOs;
- facilitate short-term attachments for scientific and technical personnel involved in risk assessment or risk management of LMOs;
- train scientific and technical personnel in certificate programs in biosafety-related areas.

Chapter 2. Animal Biotechnology:

The Caribbean region is not yet developing animal genetic engineering or cloning of animals. Although there has been some biotech research in Barbados on Blackbelly sheep, the region is far from having the capability to engage on specific animal biotechnology projects. However, experts in the region believe that an expansion of animal breeding using conventional and new embryo techniques as well as DNA techniques to characterize regional species would be a positive development. The use of molecular techniques to identify genes for breeding purposes will be high on the research agendas of several countries in coming years.